



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,061	03/30/2006	Adriaan Ludikhuize	PHUS030374	9388

24737 7590 09/20/2007
PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER

CHO, JAMES HYONCHOL

ART UNIT	PAPER NUMBER
----------	--------------

2819

MAIL DATE	DELIVERY MODE
-----------	---------------

09/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/574,061

Applicant(s)

LUDIKHUIZE ET AL.

Examiner

James H. Cho

Art Unit

2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 1-2 are objected to because of the following informalities:

"a respective driver circuit " on line 3 of claim 1 appears to be – a respective current driver circuit --;

"the at least one driver circuit" on line 1 of claim 2 appears to be – the current driver circuits--;

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Wheeler et al. (US PAT No. 6,603,291).

Regarding claim 1, Figs. 6 and 8 of Wheeler et al. teaches a down converter, comprising: an interface section (50), which connects the down converter to at least one switch (6), and each switch is connected to a respective driver circuit (30)., wherein the current driver circuits and the switches are disposed on a common integrated circuit

Art Unit: 2819

(single hybrid circuit package including the whole circuit; col. 4, lines 7-10; Fig. 8 shows a common semiconductor body 190; col. 6, lines 46-49).

Regarding claim 2, Figs. 6 and 8 of Wheeler et al. teaches a down converter as recited in claim 1, wherein each of the at least one driver circuit is a high-current driver circuit (driver 30 and 32), and each of the at least switches is a power switch (6 and 8 being power switch used for DC-DC conversion).

Regarding claim 3, Figs. 6 and 8 of Wheeler et al. teaches a down converter as recited in claim 1, wherein the interface section is monolithically integrated with the at least one power switch (Fig. 6 and 8 shows a single package, i.e. a common or monolithical semiconductor body).

Regarding claim 4, Figs. 6 and 8 of Wheeler et al. teaches a down converter as recited in claim 1, wherein the down converter includes a high-side current driver (130), which is connected to a high-side power switch (6).

Regarding claim 5, Figs. 6 and 8 of Wheeler et al. teaches a down converter as recited in claim 1, wherein the down converter includes a low-side current driver (32), which is connected to a low-side power switch (8).

Art Unit: 2819

Regarding claim 6, Figs. 6 and 8 of Wheeler et al. teaches a down converter as recited in claim 4, wherein the high side current driver is connected to a level shifter (132).

Regarding claim 7, Figs. 6 and 8 of Wheeler et al. teaches a down converter as recited in claim 5, wherein a decoder (LOGIC CIRCUITRY) is connected to the low side block and to a level shifter (136)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-9 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wheeler et al. in view of Vinal (US PAT No. 5,247,212).

Regarding claims 8-9 and 11-12, Wheeler teaches the down converter of claims 4 and 1 where the down converter related to FET and MOSFET, but does not teach the high-side current driver and the low-side current driver being a CMOS device or the integrated circuit being a silicon based or SiGe based integrated circuit. However, Vinal teaches a CMOS driver in Fig. 14 where FETs with and without germanium in the channel for the purpose of providing variable carrier mobility, i.e. increasing speed. It would have been obvious at the time of invention to provide FET driver of Wheeler with

Art Unit: 2819

CMOS driver with or without germanium of Vinal since it would provide flexibility in operating speed.

Claims 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wheeler et al. (US PAT No. 6,603,291)

Regarding claim 11, Figs 6 and 9 of Wheeler teaches the down converter as recited in claim 1 except for a parasitic inductor between a current driver and a switch being on the order of approximately 7 nH or less. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to specify a parasitic inductance between the current driver and a switch on the order of 1nH or less by using different circuit parameters, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

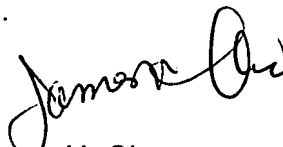
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Cho whose telephone number is 571-272-1802. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rexford Barnie can be reached on 571-272-7492. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2819

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "James H. Cho", is positioned above the printed name.

James H. Cho
Primary Examiner
Art Unit 2819